

REMARKS

By the foregoing Amendment, Claims 1, 2 and 26 are amended and Claims 5 and 6 are cancelled. Entry of the Amendment, and favorable consideration thereof, is earnestly requested. Claim 7 having been previously cancelled, and Claims 5 and 6 being cancelled herein, Claims 1-4 and 8-32 are currently pending.

In the Final Office Action mailed December 24, 2009, Claim 2 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claim 2 has been amended in a manner which Applicant believes obviates these rejections.

In Response to the Final Office Action mailed December 24, 2009, Applicant filed a Response on June 14, 2010. Although the Examiner denied entry of the amendments presented in the Response, she issued a substantive Advisory Action addressing the Arguments raised by Applicant. Herein, Applicant first responds to the issues raised in the Advisory Action, and then addresses the patentability of Claim 1, as amended herein, over the cited prior art.

Issues Raised in Advisory Action

In the Advisory Action the Examiner states:

First, Examiner has not recognized the pre-degradation issues as applicant asserts, rather, Examiner finds that if applicants statement that it seems likely that degradable polymers may start to pre-degrade if kept as granules with large surface/volume ratio for a long time were true, any chewing gum base made with biodegradable polymer would be expected to degrade over time.

This is exactly what the Applicant has previously stated and now repeats again: Indeed, *any chewing gum base made with biodegradable polymer **would be expected** to degrade over time*, unless special care is taken.

It may seem that the Examiner questions the basic premise, whether degradable polymers may actually degrade. Degradable polymers are named degradable since they can be degraded, e.g., through contact with moisture from the surrounding air. Hence, indeed, care must be taken and such polymers should be handled differently than regular chewing gum polymers.

The fact that degradable polymers are vulnerable can, e.g., be seen from Wittorff et al., page 13, lines 15-19:

The degradation or disintegration of such degradable polymers can be effected or induced by physical factors such as temperature, light, moisture, by chemical factors such as hydrolysis caused by a change in pH or by the action of enzymes capable of degrading the polymers.

And further, Wittorff et al., page 6, lines 23-27, states that this will also be a problem for a gum base comprising such polymers. It should be obvious that if no

special care is taken, a piece of chewing gum may very likely be exposed to temperature, light and moisture, which for a conventional piece of chewing gum is not a problem, but damaging to degradable polymers in chewing gum.

Therefore, degradable polymers in a chewing gum kept for a long time in a package on the shelf in a store may actually start to degrade unless precautions are taken. A lot of research has been put into handling these satisfactorily; however at present still no product has been sent to the market, i.e., due to the fact that pre-degradation can still not be sufficiently avoided.

The Examiner also states the following in the Advisory Action:

Second, in the case Bunczek et al. disclose a chewing gum base comprising biodegradable polymer -- clearly, the disclosure of Bunczek et al. demonstrates the successful use of biodegradable polymers in chewing gum. A skilled person would have considered the use of biodegradable polymers in the invention of Gmunder et al. because they are known to be used successfully in chewing gum bases generally.

In response to this assertion, Applicant respectfully submits that the fact that Bunczek et al. has not described any problems with the use of biodegradable polymers cannot be used as proof that such problems do not exist. First of all, any observed problems may not have been described, and second of all, Bunczek et al. was filed in 1997, at which time the problems might not have been realized yet.

Applicant realizes that statements regarding what Bunczek et al. actually did know at the time of filing can only be speculations; however, what is clear, unquestionable and known to the skilled person is that Bunczek et al. has **not** resulted in a product being brought to market. And with the knowledge as described in the present application and, e.g., Wittorff et al., it seems likely that problems with degradability may have had an important role in that fact.

Hence the statement of the Examiner that biodegradable polymers "*are known to be used successfully in chewing gum bases **generally***" seems to be relying on a thin basis.

Consequently, with this knowledge in mind, it is respectfully submitted that the skilled person indeed would refrain from using degradable polymers in the invention of Gmunder et al. in that it seems likely that degradable polymers may be exposed to moisture from, e.g., air humidity and start to pre-degrade if kept as granules with large surface/volume ratio for a long time, which will be the case during transportation as in Gmunder et al.

In the Advisory Action, the Examiner further states:

Unexpected results must be established by factual evidence; mere argument or conclusory statements in the specification do not suffice. While applicant states that it is "contrary to the conventional wisdom" to use degradable polymers in conjunction with granules, there is nothing in the

record that demonstrates the criticality of the claimed range of water content, i.e. less than 5.0% by weight of the gum base.

However, the attention of the Examiner is respectfully directed to Table 7 (page 20) and Table 11 (page 25) of the present specification. The experiments behind these tables are indeed *in the record* and do indeed *demonstrate the criticality of the water content*.

It is seen from these experiments that lowering of the water content improves the result. Hence, the 5% water is not a strict limit set to distinguish what is good and what is bad; however it sets an upper limit of what could be seen as acceptable for use.

Further, in the Advisory Action, it is stated:

Second, while Bunczek et al. disclose that polyesters made here were not readily compatible with other base ingredients... Bunczek et al. also disclose that a quality chewing gum base and gum product can be made from polyesters from adipic acid and glycerol and/or propylene glycol."

Against this, Applicant respectfully submits that the argument above also applies, namely that no mentioning of a problem is not the same as the problem not existing.

Claim Amendments

Regardless of the fact that the Applicant continues to believe that the previous Claim 1 was non-obvious, in order to further distinguish from the prior art, Claim 1 has been amended herein to recite a water content of less than 1.0% by weight of the gum base.

In this regard, on page 3 of the Advisory Action, the Examiner states:

While Gmunder et al. does not provide motivation for employing moisture content lower than 5%, the fact remains that Gmunder et al. teach moisture content that overlaps that presently claimed, i.e. 1% to 12%.

However, with the present amendment, no overlapping in water content with Gmunder et al. is present any longer.

Furthermore Claim 1 has been amended to include that the gum base granules are for a compressed chewing gum. This amendment further distinguishes from Gmunder et al., in which the disclosed particulated chewing gum bases are used for making transportation of chewing gum base easier, and a conventional chewing gum can then be manufactured by standard melting and/or mixing methods when the particulated chewing gum base has reached its destination.

Consequently, amended Claim 1 reads:

1. Gum base granules for a compressed chewing gum, said gum base granules comprising at least one biodegradable gum base polymer, wherein the gum base has a water content of less than 1.0% by weight of the gum base.

Non-Obviousness

Applicant respectfully submits that its arguments previously set forth regarding why the cited documents would not even be considered for combination by the skilled person still stand; however, even if the documents in question are combined, Applicant respectfully submits that this will not lead to the present invention, which is supported by the arguments presented herein.

In previous arguments Applicant has argued on the basis of Gmunder et al. as being the most suitable starting point for the skilled person, since Gmunder et al. discloses both gum granules and water content of these. In comparison, Bunczek et al. discloses a conventionally mixed piece of chewing gum with degradable polymers. Hence, Gmunder et al. seems to be the most likely starting point of the documents cited.

Gmunder et al. as a starting point seems also to be the case, when the Examiner on page 2 of the Advisory Action states:

A skilled person would have considered the use of biodegradable polymers in the invention of Gmunder et al. because they are known to be used successfully in chewing gum bases generally.

However, on the next page of the Advisory Action, in response to arguments from Applicant, the Examiner states:

First, in this case, a skilled person is starting with the disclosure of Bunczek et al. and not Gmunder et al.

Applicant is puzzled, but sees no value in arguing for where to start, since it is respectfully submitted that none of the paths will lead to the present invention. As such, due to this sentence from the Examiner, Bunczek et al. is used as a starting point in the following argumentation.

Starting from Bunczek et al., the skilled person starts with a conventionally mixed piece of chewing gum including edible polyesters. As previously recognized by the Examiner, indication is given on neither granules nor low water content in Bunczek et al.

Looking into Gmunder et al., the skilled person would read about particulated chewing gum bases for making transportation of chewing gum base easier, until a conventionally mixed piece of chewing gum then can be manufactured by standard melting and/or mixing methods when the particulated chewing gum base has reached its destination.

No mention can be found regarding the use of the granules to make compressed chewing gum. Furthermore, indirect mention regarding water content, as stated in previous arguments, can be seen, but there would be no motivation to conclude any effects from specific levels of water contents.

As previously calculated by Applicant and repeated by the Examiner in the Advisory Action, the particulated gum base of Gmunder et al. holds an amount of water between 1 and 12% by weight. Therefore, even if, for some reason, the skilled person would consider anything about water content, absolutely no teaching, suggestion or motivation would be seen from Gmunder et al. to hold the water content below 1% by weight, as required by amended Claim 1.

Furthermore, indication is given in neither Bunczek et al. nor Gmunder et al. about compression of granules, and hence the skilled person would have no idea of whether the manufactured particulated gum base could be used in compressed chewing gum, which is produced according to entirely different methods than conventional chewing gum.

Consequently, it is respectfully submitted that the skilled person would not reach the present invention of amended Claim 1 and therefore, amended Claim 1 is considered to be non-obvious.

For the foregoing reasons, Applicant respectfully submits that all pending claims, namely Claims 1-4 and 8-32, are patentable over the references of record, and earnestly solicits allowance of the same.

Respectfully submitted,

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